(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
9 June 2005 (09.06.2005)

PCT

(10) International Publication Number
WO 2005/051598 A1

(51) International Patent Classification[7]: B24C 7/00, 5/02, 1/04

(21) International Application Number: PCT/GB2004/004796

(22) International Filing Date: 15 November 2004 (15.11.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0326894.3 19 November 2003 (19.11.2003) GB
0402214.1 31 January 2004 (31.01.2004) GB

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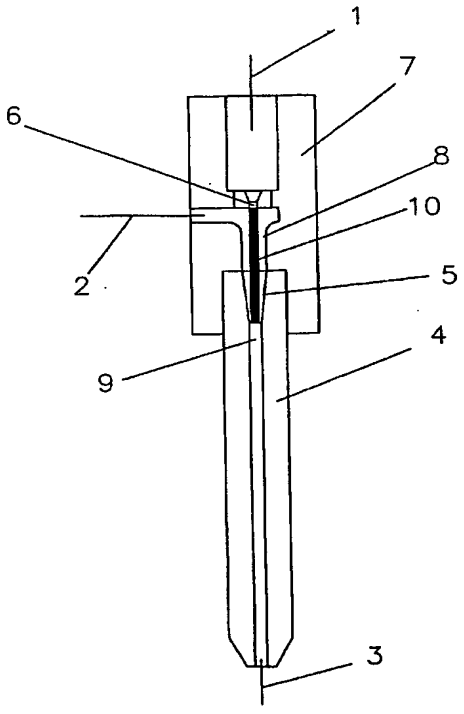
(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE,

[Continued on next page]

(54) Title: ABRASIVE ENTRAINMENT



(57) Abstract: A method for generating a high-velocity cutting jet (3) comprises forming a high velocity jet (10) of a liquid such as water, forming a suspension of an abrasive such as garnet in a carrier gas containing a condensable vapour such as superheated steam, and entraining the abrasive suspension into the liquid jet (10) so that the vapour condenses, producing a cutting jet (3) of a liquid/abrasive mixture. A cutting head (7) of apparatus for generating the cutting jet (3) has a chamber (8) into which the abrasive suspension is passed. The liquid jet (10) traverses this chamber (8), entraining the suspension, and passes into a tapering transition region (5) and a bore (9) of a nozzle (4). Kinetic energy is transferred from the liquid jet (10) to the abrasive as they pass through the chamber (8) and the nozzle (4). Condensation of the vapour ensures that the cutting jet (3) leaves the nozzle (4) at close to ambient pressure, reducing the diameter of the cutting jet (3) compared to conventional abrasive-in-air systems, so as to increase the energy density of the abrasive.

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SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report*

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